

## ABSTRACT OF THE DISCLOSURE

Motion artifacts are reduced for three- or four-dimensional imaging with a mechanically rocked array by determining a position of a scan within a volume as a function of velocity. A represented position within a volume of a mechanically rocked scan is determined. Differences in velocity associated with different scan plane positions are used to alter or adjust a scan position. For example, the start position for a transmit operation or the spatial location represented by previously acquired data is altered as a function of a corresponding velocity in the mechanical movement of the array. Variation in velocity results in different relative scan positions or adjustments within the volume. The velocity variation is determined in an open loop, such as from previously measured or expected velocity of the array, or from feedback from actual measured position and associated velocity of the array.